ИК "Допълнение към курса по ДИС за компютърни специалности" 2017-2018 учебна година

Курсова задача №3а

Като използвате подходящо развитие в степенен ред на подинтегралната функция пресметнете с точност $E = 10^{-4}$ определения интеграл.

1.
$$\int_{0}^{\frac{1}{4}} e^{-x^{2}} dx.$$
2.
$$\int_{0}^{\frac{1}{2}} \frac{\ln(1-x)}{x} dx.$$
3.
$$\int_{0}^{\frac{1}{2}} \frac{e^{-x^{2}} - 1}{\sqrt[3]{x}} dx.$$
4.
$$\int_{0}^{\frac{1}{4}} \frac{\ln(1+3x)}{x} dx.$$
5.
$$\int_{0}^{\frac{1}{2}} \frac{e^{x} - 1}{\sqrt{x}} dx.$$
6.
$$\int_{0}^{1} \frac{dx}{\sqrt[3]{1+x^{4}}}.$$
7.
$$\int_{0}^{\frac{1}{2}} \frac{e^{x} - 1}{x} dx.$$
8.
$$\int_{0}^{\frac{1}{4}} \sqrt[3]{x} \cos^{2}x dx.$$
9.
$$\int_{0}^{\frac{1}{2}} \frac{\ln(1-x)}{\sqrt{x}} dx.$$
10.
$$\int_{0}^{1} \sqrt[4]{1+x^{2}}.$$
11.
$$\int_{-1}^{0} \frac{e^{2x} - 1}{x} dx.$$
12.
$$\int_{0}^{\frac{1}{2}} \frac{\ln(1+x^{2})}{x} dx.$$

7.
$$\int_0^{\frac{1}{2}} \frac{e^x - 1}{x} dx.$$

10.
$$\int_0^1 \sqrt[4]{1+x^2}.$$

13.
$$\int_{0}^{\frac{1}{3}} \frac{\arctan(4x^{2})}{x} dx.$$
14.
$$\int_{0}^{1} \sqrt[3]{x} e^{-x^{2}} dx.$$
15.
$$\int_{0}^{\frac{1}{6}} e^{-2x^{2}} dx.$$
16.
$$\int_{0}^{\frac{1}{4}} \frac{\ln(1-2x)}{x} dx.$$
17.
$$\int_{0}^{\frac{1}{4}} \frac{e^{-2x^{2}}-1}{\sqrt[4]{x}} dx.$$
18.
$$\int_{0}^{\frac{1}{3}} \frac{\ln(1-x^{2})}{x^{2}} dx.$$

16.
$$\int_0^{\frac{1}{4}} \frac{\ln(1-2x)}{x} \, dx$$

19.
$$\int_0^{\frac{1}{4}} \frac{e^{2x} - 1}{\sqrt[3]{x}} \, dx.$$

22.
$$\int_0^{\frac{1}{2}} \sqrt[4]{x} \sin^2 x \, dx.$$

25.
$$\int_{-1}^{0} \frac{e^{3x} - 1 - 3x}{x^2} dx.$$

28.
$$\int_0^{\frac{1}{4}} \sqrt[4]{x} e^{-2x^2} dx.$$

31.
$$\int_0^{\frac{1}{5}} \frac{\arctan(3x^2)}{x} dx.$$
34.
$$\int_0^{\frac{1}{5}} \frac{\ln(1-3x)}{x} dx.$$

34.
$$\int_{0}^{\frac{1}{5}} \frac{\ln(1-3x)}{x} dx$$

2.
$$\int_0^{\frac{1}{2}} \frac{\ln(1-x)}{x} dx$$
.

5.
$$\int_{0}^{\frac{1}{2}} \frac{e^{x}-1}{\sqrt{x}} dx$$

8.
$$\int_0^{\frac{1}{4}} \sqrt[3]{x} \cos^2 x \, dx$$
.

11.
$$\int_{-1}^{0} \frac{e^{2x} - 1}{x} dx.$$

14.
$$\int_0^1 \sqrt[3]{x} e^{-x^2} dx$$

17.
$$\int_0^{\frac{1}{4}} \frac{e^{-2x^2} - 1}{\sqrt[4]{x}} dx$$

20.
$$\int_0^1 \frac{dx}{\sqrt[4]{1+x^2}}.$$

23.
$$\int_0^{\frac{1}{3}} \frac{\ln(1-x)}{\sqrt[4]{x}} \, dx$$

26.
$$\int_0^{\frac{1}{3}} \frac{\ln(1+x^3)}{x} \, dx.$$

29.
$$\int_0^{\frac{1}{4}} \frac{\ln(1-x^2)}{\sqrt{x}} \, dx$$

32.
$$\int_0^1 \sqrt[4]{x} e^{-x^2} dx$$

32.
$$\int_0^1 \sqrt[4]{x} e^{-x^2} dx.$$
 33.
$$\int_0^{\frac{1}{8}} e^{-3x^2} dx.$$
 35.
$$\int_0^{\frac{1}{6}} \frac{e^{-4x^2} - 1}{\sqrt[4]{x}} dx.$$
 36.
$$\int_0^{\frac{1}{9}} \frac{\ln(1 - 8x)}{x} dx.$$

3.
$$\int_0^{\frac{1}{2}} \frac{e^{-x^2} - 1}{\sqrt[3]{x}} dx$$

6.
$$\int_0^1 \frac{dx}{\sqrt[3]{1+x^4}}.$$

9.
$$\int_0^{\frac{1}{2}} \frac{\ln(1-x)}{\sqrt{x}} dx$$
.

12.
$$\int_0^{\frac{1}{2}} \frac{\ln(1+x^2)}{x} dx$$

15.
$$\int_0^{\frac{1}{6}} e^{-2x^2} \, dx$$

17.
$$\int_0^{\frac{1}{4}} \frac{e^{-2x^2} - 1}{\sqrt[4]{x}} dx.$$
 18.
$$\int_0^{\frac{1}{3}} \frac{\ln(1 - 8x)}{x} dx.$$

20.
$$\int_0^1 \frac{dx}{\sqrt[4]{1+x^2}}.$$
 21.
$$\int_0^{\frac{1}{3}} \frac{e^2x - 1 - 2x}{x^2} dx.$$
 23.
$$\int_0^{\frac{1}{3}} \frac{\ln(1-x)}{\sqrt[4]{x}} dx.$$
 24.
$$\int_0^1 x \sqrt[3]{1+x^2}.$$

24.
$$\int_0^1 x \sqrt[3]{1+x^2}$$

27.
$$\int_0^{\frac{1}{4}} \frac{\arctan(3x^2)}{\sqrt{x}} dx$$
.

29.
$$\int_0^{\frac{1}{4}} \frac{\ln(1-x^2)}{\sqrt{x}} dx.$$
 30.
$$\int_0^{\frac{1}{4}} (e^{2x}-1)\sqrt[3]{x} dx.$$

33.
$$\int_0^{\frac{1}{8}} e^{-3x^2} dx.$$

36.
$$\int_0^{\frac{1}{9}} \frac{\ln(1-8x)}{x} dx$$